

Residential Decks

A permit is **required** if the proposed deck **will be attached** to the dwelling and/or is **30" (or more) off the ground**. You must obtain a building permit prior to starting any construction on your deck. Please review all of the application requirements. Once plan approval has been given and a permit issued, if you decide to make changes to or alter your plan, you must submit changes for approval.

To obtain a permit for construction, you will need to submit the following 3 items:

1. Site Plan (example enclosed)
2. Deck Plan (see below)
3. Building Permit Application (enclosed)

NOTE: If you are in a development with a homeowners' association, a letter from the Board of Directors approving the deck, or stating the Board does not have to approve construction is required.

Incomplete plans will not be reviewed. Please allow 7-10 business days for review. You will be contacted by the Building inspections Division when the plan has been approved.

DECK PLAN (refer to enclosed deck diagram to complete this section)

- ☐ Dimensions of deck: length width
- ☐ Footing depth:
- ☐ Footing size:
- ☐ Column size:
- ☐ Size of beam(s):
- ☐ Post spacing:
- ☐ Size of joists:
- ☐ Spacing of joists:
- ☐ Distance between deck and ground:
- ☐ Height of guardrail: 36 inch minimum
- ☐ Floor System: ☐ 2" x 10" ☐ TJI ☐ Floor Truss

- ☐ Size of openings in guardrail:
 1. Distance between balusters: Shall be less than 4 inches
 2. Distance between decking & guardrail bottom: Shall be less than 4 inches
 3. Distance between each guardrail post: Shall be less than 6 feet

If your deck has STAIRS, complete the following:

- ☐ Height of the stair riser: 7 3/4" maximum
- ☐ Depth of stair treads: 10" minimum
- ☐ Height of the handrail: 34-38" minimum

STAIRWAY LIGHTING: Exterior stairways shall be provided with an artificial light source located in the immediate vicinity of the top landing of the stairway.

INSPECTIONS

You must call for a scheduled appointment time. The approved plan must be on site for all inspections. Typically 3 inspections are required:

1. **Footings.** These will be **checked** for proper **diameter and depth, flare, a flat surface** at the base, and **no water** in the holes.
2. **Framing.** If your **deck surface** is **4 feet**, or closer, to the ground (grade), you **must pass a framing inspection before the decking material** may be **applied** to the deck surface. Structural integrity and proper attachment of all connectors will be inspected.
3. **Final.** For decks that are 4 feet or greater off the ground (grade), framing and final inspections may be completed together. A **final inspection must be completed** to be sure that the deck complies with the current Minnesota State Building Code.

City of Coon Rapids Building Permit Application

OFFICE USE ONLY

Job Site Address: _____ Permit # _____

Project Valuation: \$ _____ The Applicant is: _____ Owner and Occupant _____ Contractor
(must include material and labor costs)

Property Owner

Name: _____ Contact Person: _____

Address: _____ City: _____ State: _____ Zip: _____

Phone: _____ Cell: _____ Email: _____

Contractor

Name: _____ Contact Person: _____ Email: _____

Address: _____ City: _____ State: _____ Zip: _____

Phone: _____ Cell: _____ Contractor License#: _____ Lead Cert #NAT _____

Residential

- ☐ Mobile Home ☐ Single Family
☐ Townhome ☐ Two-Family

____ New	____ Addition	____ Siding
____ Demolish	____ Basement	____ Swimming Pool
____ Move	____ Finish	____ Windows:
____ Repair	____ Deck/Porch	Number: _____
____ Replace	____ Driveway	Type: _____
____ Remodel	____ Garage/Shed	____ Other:
(Area to be Remodeled)	____ Fire Damage	_____
	____ Roof	_____

Commercial

- ☐ Commercial ☐ Hotel/Motel ☐ Multi-Family
☐ Hospital/Medical ☐ Industrial ☐ Public Building

____ New	____ Addition
____ Demolish	____ Fire Damage
____ Repair	____ Parking Lot
____ Replace	____ Roof
____ Remodel	____ Siding
(Area to be Remodeled)	____ Windows: Number _____ Type _____
	____ Other: _____

Description of Work: _____

Permit becomes void if work does not begin within 180 days or is suspended at any time for over 180 days. Permits issued and Inspections made by the City are a public service and do not constitute any representation, guarantee, or warranty, either implied or expressed, to any person as to the condition of the building or conformance to applicable construction codes. The Undersigned acknowledges that this application has been read and that the above is correct and agrees to comply with all the ordinances and laws of the City of Coon Rapids.

Periodic and/or a final inspection of this work are required by the Minnesota State Building Code. It is the responsibility of the applicant to call the Coon Rapids Inspections Division at 763 767-6476 to schedule an inspection.

Applicant's Printed Name _____

Applicant's Signature _____

Date _____

OFFICE USE ONLY

BUILDING INFORMATION

____ Number of Stories ____ Number of Buildings Total Sq. Ft. _____ Height _____ Length _____ Width _____
____ Property Zoning ____ Occupancy Group ____ Type of Construction Fire Sprinklers Yes ____ No ____

REQUIRED INSPECTIONS

____ Consultation	____ Foundation/Waterproof	____ Ice & Water Barrier	____ Site	____ Smoke/C.O. Alarms
____ Final	____ Framing	____ Insulation/VB	____ Sheathing	____ Under slab
____ Footing	____ Gypsum Wallboard	____ Pan Flashing		
____ Forms for Concrete	____ House Wrap	____ Poured Wall	Other _____	

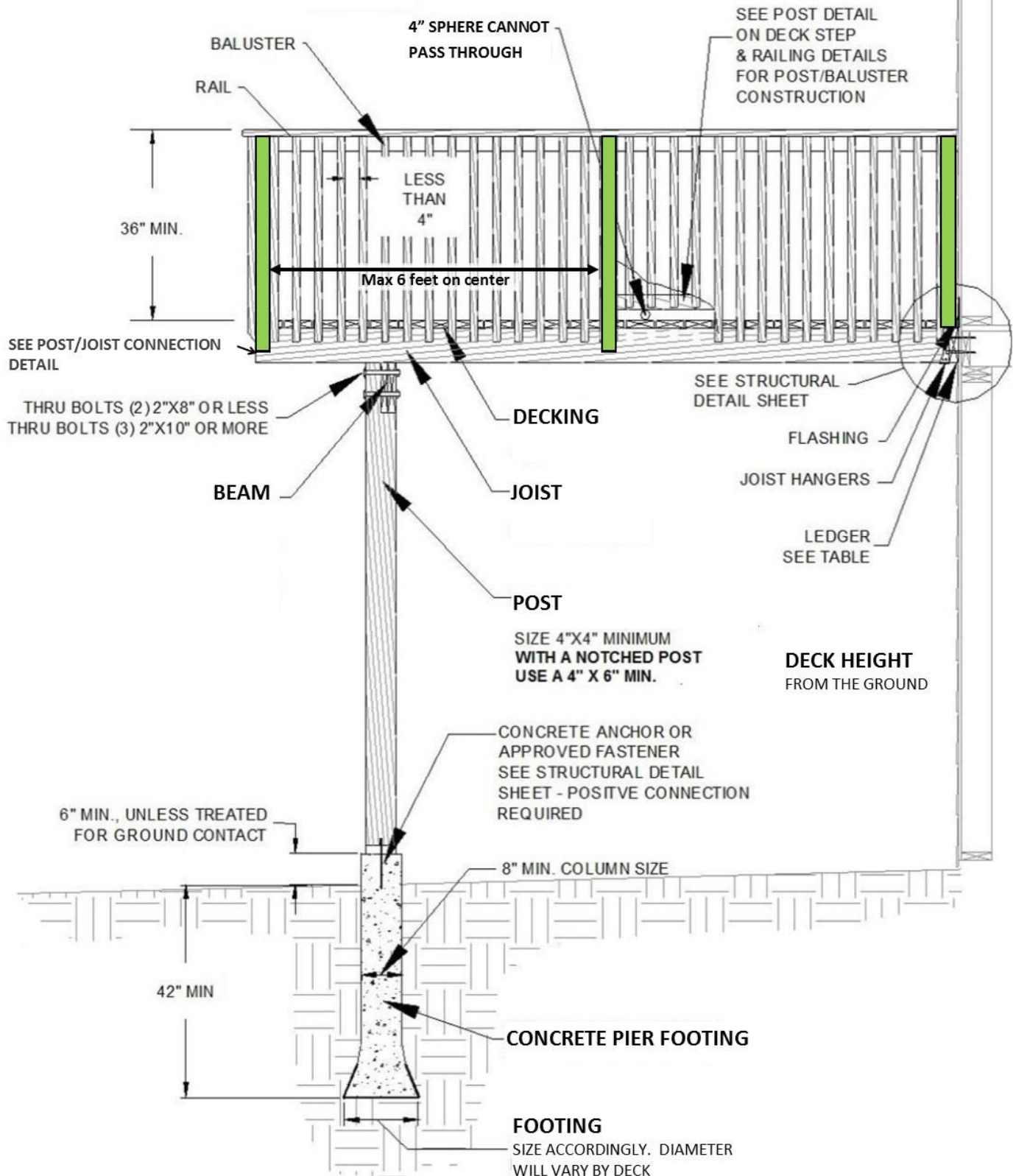
Fee schedule is online at:
coonrapidsmn.gov/696/Permit-Fees

11155 Robinson Dr, Coon Rapids, MN 55433
763-767-6476 Office, 763-767-6573 Fax, buildinginsp@coonrapidsmn.gov

Use this diagram as a reference to complete the Deck Plan on page 1.

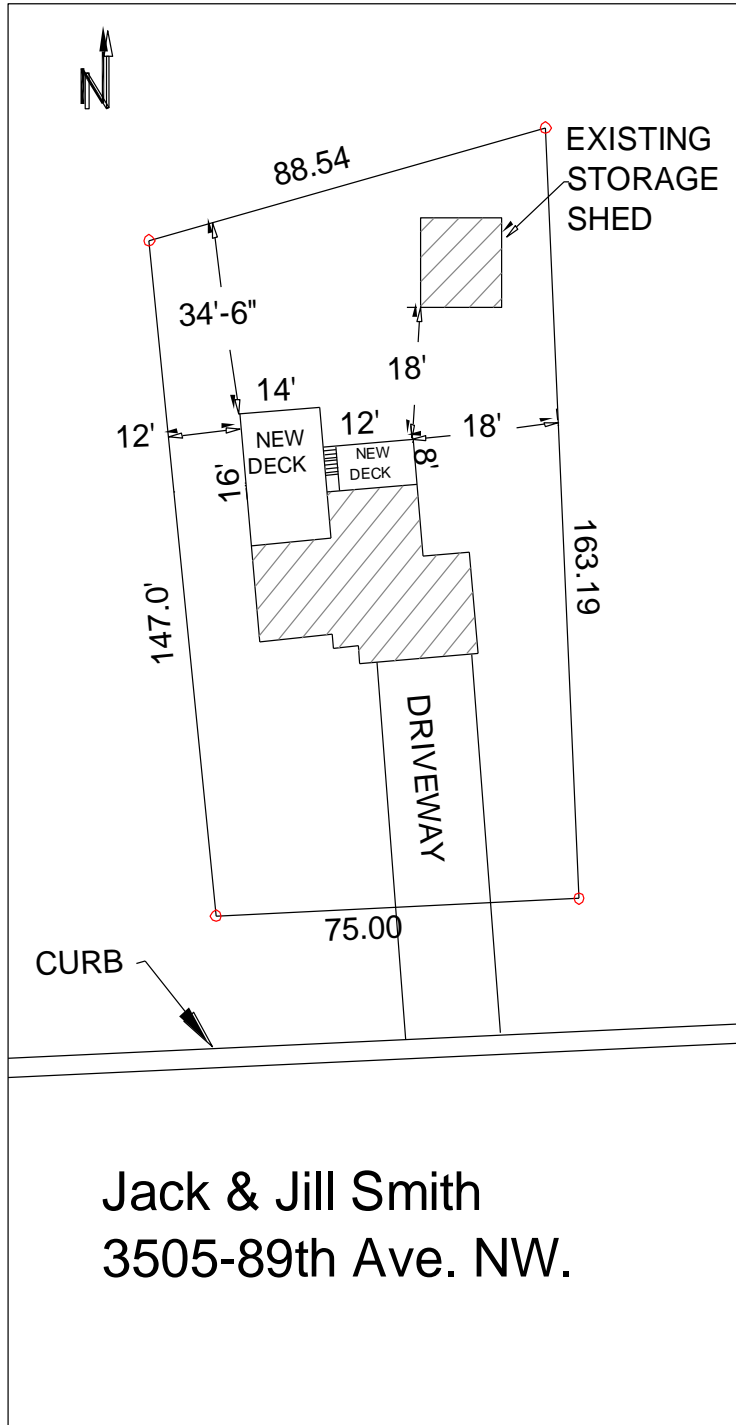
DECKS SUPPORTED BY ATTACHMENT TO AN EXTERIOR WALL SHALL BE POSITIVELY ANCHORED TO THE PRIMARY STRUCTURE AND DESIGNED FOR BOTH VERTICAL AND LATERAL LOADS AS APPLICABLE. SUCH ATTACHMENT SHALL NOT BE ACCOMPLISHED BY THE USE OF TOENAILS OR NAILS SUBJECT TO WITHDRAWAL. WHERE POSITIVE CONNECTION TO THE PRIMARY BUILDING STRUCTURE CANNOT BE VERIFIED DURING INSPECTION, DECKS SHALL BE SELF SUPPORTING.

NOTE: FASTENERS, HARDWARE, ETC. ARE REQUIRED TO BE ZMAX, TRIPLE ZINC, STAINLESS, OR HOT DIPPED GALVANIZED.



Sample Site Plan

You may contact Coon Rapids Building Inspections at 763-767-6476 to request a copy of your lot survey. **Note: not all properties have a lot survey on file.**



1"=20' SCALE

INDICATE THE LOCATION &
DIMENSIONS OF YOUR
PROPOSED DECK ON YOUR
LOT SURVEY/SITE PLAN.

SHOW ON PLAN

1. LOT LINES.
2. LOT DIMENSIONS.
3. OWNERS NAME.
4. ADDRESS.
5. DRIVEWAY.
6. POND/LAKE/STREAM.
7. EASEMENTS.
8. POWER SUPPLY.
9. DIMENSIONS TO PROPOSED PROJECT AND ALL OTHER STRUCTURES.
10. SIZE OF NEW STRUCTURE.
11. DIMENSIONS TO LOT LINES.
12. DIMENSIONS TO OTHER BLDGS.
13. INCLUDE YARD SETBACKS AND EASEMENTS ON SIDE, FRONT, AND BACK YARDS.
14. LABEL ALL ADJACENT STREETS.
15. INCLUDE SCALE.

NOTE:

IF SITE PLAN IS NOT COMPLETE,
THE PROCESS FOR REVIEW OF
APPLICATION WILL BE HELD UP.

PROVIDE 2 COPIES OF A SITE
PLAN.

CALL BEFORE YOU DIG!
CONTACT GOPHER STATE ONE-CALL
FOR UTILITY LOCATIONS
651-454-0002
OR
811 FROM YOUR CELL PHONE

Setbacks: Decks must be setback **5 feet** from the **side** lot line and **20 feet** from the **rear** lot line **for most dwellings**. However, some lots have more restrictive setbacks and easements. If a future porch is planned, setbacks may differ. Check with the **City Zoning Department at 763- 767-6430**.

Loads: All decks shall be designed to support a **live load** (people, furniture, grills, etc.) of **40 lbs** per square foot, and a **dead load** (wood, decking, etc.) of **10 lbs** per square foot. R507.2

Cantilevers/Overhanging Joists and Beams: Joists should **not overhang beams** by more than **2 feet**, and **beams must not overhang posts** by more than **1 foot** unless a special design is approved.

Cantilever Support: **DECKS CANNOT BE SUPPORTED BY CANTILEVERS** extending from the primary structure, or from another deck. Exceptions are granted only if **engineering is provided** for the capability of the cantilevers to give such support.

Ledger Attachment: Different loads require different attachment. Please refer to the **Ledger Attachment Table** provided in this hand-out. Girders supporting deck joist shall not be supported on deck ledgers or band joist. R507.2.2

Flashing: **All connections** between deck and dwelling **shall be weatherproof**. Any cuts in the exterior finish **shall be flashed**. Flashing of the **ledger** at the point of connection to the **house** is especially **critical**. R703.1, R703.8

Frost Footings: Footings are **required** for any deck **attached to a dwelling** or any other structure that has frost footings. The **minimum depth** to the base of the footings is **42 inches**. The **base** of a column footing **must be flared**, or extended, at least **4 inches** greater in diameter than the remainder of the column. **Cedar posts** must be protected **against direct contact** with the ground, concrete, or moisture. If the materials used for posts are not rated for ground contact, the concrete piers **must protrude** above grade a **minimum** of **6 inches**.

NOTE - DECKS MUST BE POSITIVELY ANCHORED TO THE PRIMARY STRUCTURE AND DESIGNED FOR BOTH VERTICAL & LATERAL LOADS R507.1

Posts and Beams: Posts **must be centered** on the concrete pier over the footing and **securely fastened** to the concrete so as to resist both **uplift and lateral displacement**. R502.9 **Splices** in beams **must be centered** over posts. Beams require **3 - ½ inch diameter Thru-bolts** to connect to the posts. **Beams setting atop posts** must be **fully anchored** with appropriate fasteners to resist uplift and lateral displacement. **Each joist must be connected to the beam** with the proper fastening criteria using either nails or "hurricane clips". **BEAM MEMBERS SHOULD BE NAILED TOGETHER ACCORDING TO CODE SPECIFICATIONS**. R602.3

Stairs: **Minimum width is 36 inches**. **Maximum riser height is 7 ¾ inches**. **Minimum tread depth is 10 inches**. Treads with a depth less than 11 inches must have compliant nosing. **Largest tread depth or riser height shall not exceed the smallest** by more than **3/8 inch** across the run of the stairs. **Treads shall be level**, (a slope no greater than 2% is permitted). **Lighting** capable of illuminating the treads and landings **is required**, shall be located in the immediate vicinity of the top landing, and shall be activated from inside the dwelling. R303.7.1

Handrails: Stairways having **4 or more risers** shall have at **least 1 handrail**. The top of the handrail **shall not be less than 34 inches or more than 38 inches above the nosing of the treads**. Handrails shall be **continuous** for the full length of the stairs shall **protrude** from the adjoining surface by at least **1 ½ inches**, but **no more than 4 ½ inches**, and the ends shall be returned or terminated into posts. **Handrails with a circular cross section** shall have an outside diameter of **not less than 1-1 ¼ inches or more than 2 inches**. Other handrails may be acceptable. See the specific code language to be sure your handrail does comply. R311.7.8. **NOTCHED POSTS WILL NOT BE ACCEPTED**.

Guardrails: A guardrail is **required** on all decks, or any portion of a deck, more than 30 inches above grade or above a lower deck. Deck **guardrails must be 36 inches high**. Open guardrails on decks must have intermediate rails (balusters) or an ornamental pattern that a **4 inch sphere** cannot pass through. **Guardrails on stairs** cannot have an **opening** between balusters that a **4 3/8 inch sphere** can pass through. R312.1.3 **NOTCHED POSTS WILL NOT BE ACCEPTED**.

Landings: There shall be a **landing at the top and bottom of stairs**. Landings must be as **wide as the stairs they serve**, have a **minimum length of 36 inches** in direction of travel, and have a **slope no steeper than 2%** (¼ inch of rise per 1 foot of run). R311.7.6, R311.7.7

Structural Details: Header beams and joists that frame into ledgers or beams shall be supported by approved framing anchors such as joist hangers. Attachment of these framing anchors must be completed according to the manufacturer's requirements; typically special nails are applied. To be used, these anchors **must be approved** for use with **treated wood**.

Nails and Screws: Fasteners, including nuts and washers shall be of stainless steel, hot-dipped, zinc-coated galvanized steel, silicon bronze or copper for attachment to preservative treated wood. Ask your materials supplier for an approved fastener. R317.3. **SCREWS CANNOT BE USED TO ATTACH JOIST HANGERS**.

Wood Required: All **exposed wood** must be **approved, treated** material. Grade **stamps and tags** must be **visible** to the inspector and **must meet the exposure criteria** to which they will be subjected (above ground, ground contact, etc.). R317.1.2 Untreated or landscaping-type materials will be rejected. Cedar and redwood are also approved; however **cedar cannot be in direct contact** with either **soil or concrete**. **OTHER DECK MATERIALS (composites, plastic, etc.) MUST BE LISTED BY AN APPROVED EVALUATION SERVICE AND APPROVED BY THE BUILDING OFFICIAL**. Ask your lumber supplier for help selecting the proper material, or the building department for a list of approved materials.

LEDGER ATTACHMENT GUIDE

TABLE R507.2 FASTENER SPACING FOR A SOUTHERN PINE OR HEM-FIR DECK LEDGER AND A 2-INCH-NOMINAL SOLID-SAWN SPRUCE-PINE-FIR BAND JOIST^{c,f,g} (Deck live load = 40 psf, deck dead load = 10 psf)

JOIST SPAN	6' and less	6'1" to 8'0"	8'1" to 10'0"	10'1" to 12'0"	12'1" to 14'0"	14'1" to 16'0"	16'1" to 18'
On-center spacing of fasteners ^{d,e}							
1/2 inch diameter lag screw with 15/32 inch maximum sheathing ^a	30	23	18	15	13	11	10
1/2 inch diameter bolt with 15/32 inch maximum sheathing	36	36	34	29	24	21	19
1/2 inch diameter bolt with 15/32 inch maximum sheathing and 1/2 inch stacked washers ^{a,b}	36	36	29	24	21	18	16

For S1: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa.

- The tip of the lag screw shall fully extend beyond the inside face of the band joist.
- The maximum gap between the face of the ledger board and face of the wall sheathing shall be 1/2 inch.
- Ledgers shall be flashed to prevent water from contacting the house band joist.
- Lag screws and bolts shall be staggered in accordance with Section R507.2.1.
- Deck ledger shall be minimum 2 x 8 pressure-preservative-treated No. 2 grade lumber, or other approved materials as established by standard engineering practice.
- When solid-sawn pressure-preservative-treated deck ledgers are attached to a minimum 1-inch-thick engineered wood product (structural composite lumber, laminated veneer lumber or wood structural panel joist), the ledger attachment shall be designed in accordance with accepted engineering practice.
- A minimum 1 x 9 1/2 Douglas Fir laminated veneer lumber rimboard shall be permitted in lieu of the 2-inch nominal band joist.
- Wood structural panel sheathing, gypsum board sheathing or foam sheathing not exceeding 1 inch in thickness shall be permitted. The maximum distance between the face of the ledger board and the face of the band joist shall be 1 inch.

R507.2.1 Placement of lag screws or bolts in deck ledgers and band joists.

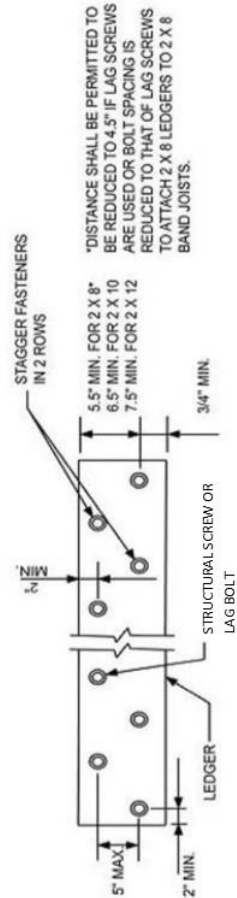
The lag screws or bolts in deck ledgers and band joists shall be placed in accordance with Table R507.2.1 and Figures R507.2.1(1) and R507.2.1(2).

TABLE R507.2.1 PLACEMENT OF LAG SCREWS AND BOLTS IN DECK LEDGERS AND BAND JOISTS

MINIMUM END AND EDGE DISTANCES AND SPACING BETWEEN ROWS			
	TOP EDGE	BOTTOM EDGE	ENDS
Ledger ^a	2 inches ^c	1/4 inch	2 inches ^b
Band Joist ^d	3/4 inch	2 inches	2 inches ^b

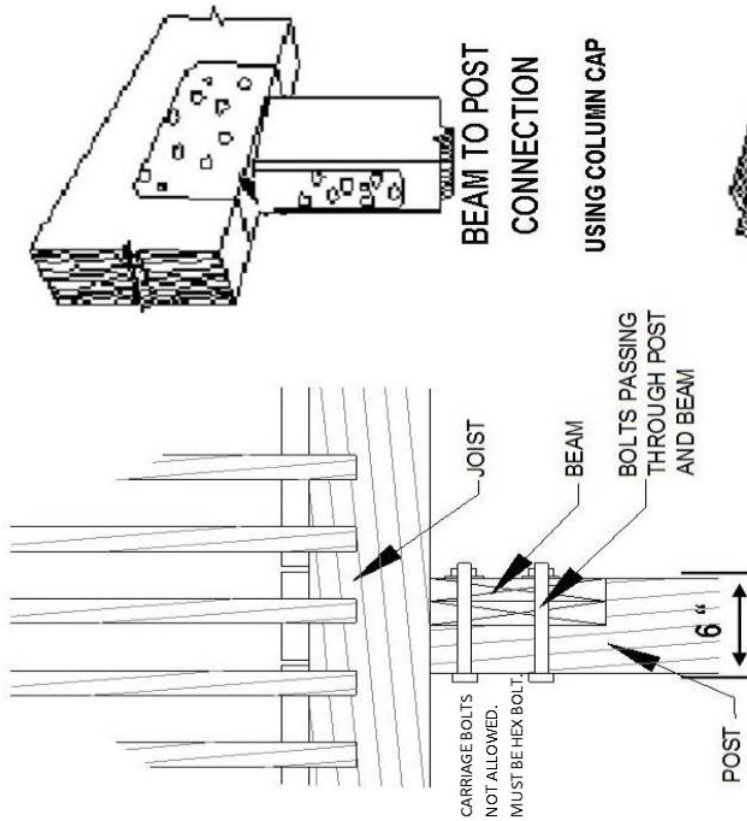
For S1: 1 inch = 25.4 mm.

- Lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger in accordance with Figure R507.2.1(1).
- Maximum 5 inches.
- For engineered rim joists, the manufacturer's recommendations shall govern.
- The minimum distance from bottom row of lag screws or bolts to the top edge of the ledger shall be in accordance with Figure R507.2.1(1).



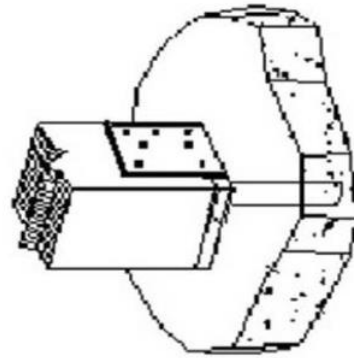
For S1: 1 inch = 25.4 mm.

STRUCTURAL DETAILS



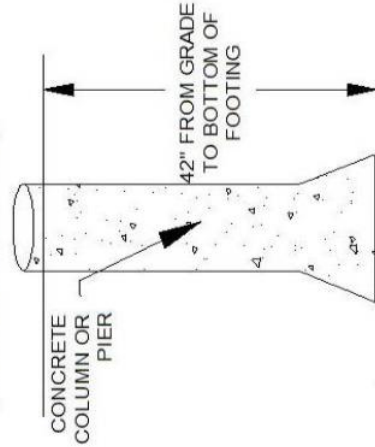
BEAM TO POST CONNECTION

USING COLUMN CAP



POST TO FOOTING CONNECTION

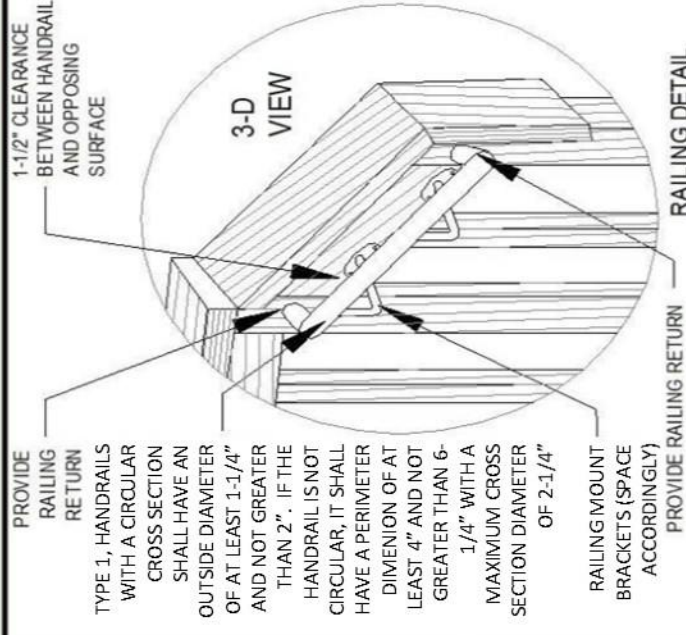
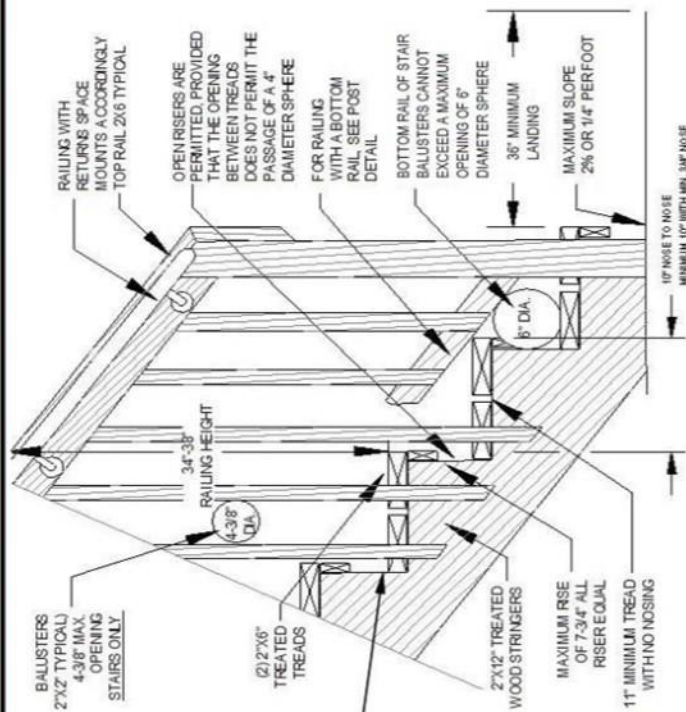
FOOTINGS MUST HAVE FLARE OR BE WIDER THAN THE COLUMN OR PIER BY MINIMUM OF 4" (2" ALL THE WAY AROUND)



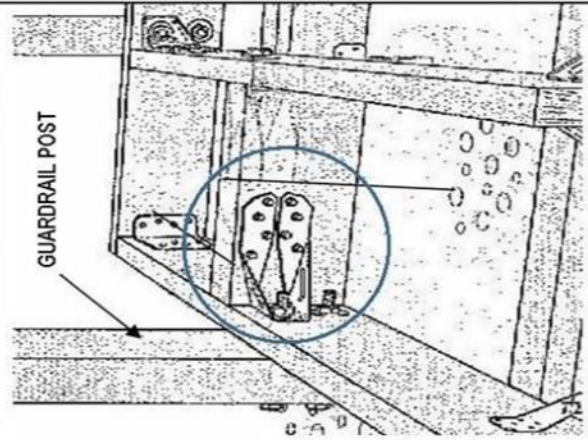
RISERS AND TREADS

THE GREATEST RISER HEIGHT WITHIN ANY FLIGHT OF STAIRS SHALL NOT EXCEED THE SMALLEST BY MORE THAN 3/8"

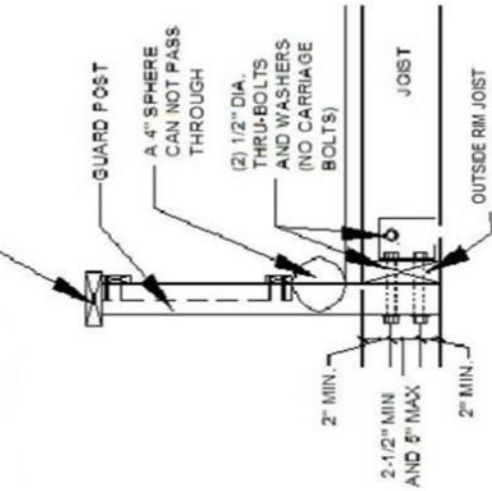
THE GREATEST TREAD DEPTH WITHIN ANY FLIGHT OF STAIRS SHALL NOT EXCEED THE SMALLEST BY MORE THAN 3/8"



POST TO JOIST CONNECTION

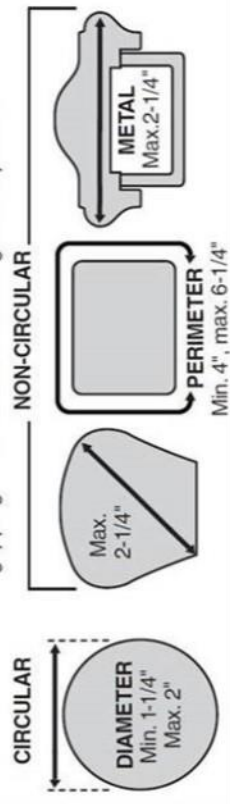


POST DETAIL

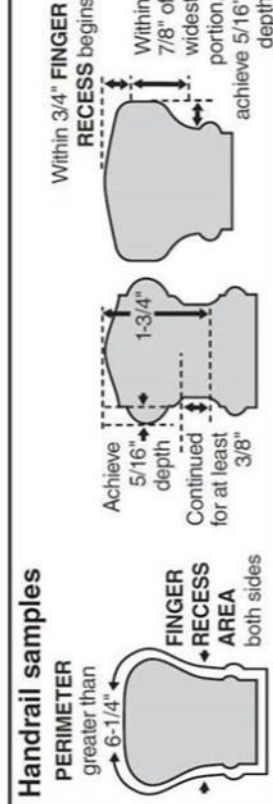


Handrail details

Other shapes may be acceptable if they provide equivalent gripping service. Contact Building and Inspection.



Handrail samples



HANDRAILS ARE TO BE FASTENED PER THE MANUFACTURER'S RECOMMENDATION